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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/928,405 | 08/14/2001 | Tokio Shimura | 01-189 | 7330 |

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| EXAMINER | |
|---|---|
| ZHENG, EVA Y | |
| **ART UNIT** | **PAPER NUMBER** |
| 2634 | |

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/928,405 | SHIMURA ET AL. | |
| | Examiner | Art Unit | |
| | Eva Yi Zheng | 2634 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *14 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-6* is/are rejected.

7)☒ Claim(s) *1-3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/14/01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Objections*

1. Claim 1 is objected to because of the following informalities:

a) on line 17-18, recitation: "switching signal a signal generation inhibiting period" should be changed to -- switching signal and a signal generation inhibiting period --.

b) on line 29, recitation: "in steps the output" should be changed to -- in steps of the output --.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 4, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Iida et al. (US 4,652,108).

a) Regarding claim 4, Iida et al. disclose a signal transmitter comprising:

a battery (1 in Fig. 1);

a voltage boosting control signal generating means (block 3 in Fig.1) for sequentially generating a voltage boosting control signal pulses through application of an output voltage of the battery as a power source voltage;

a voltage boosting means (block 4 in Fig. 1) for executing a switching operation (2 in Fig. 1) through input of the voltage boosting control signal and also executing the voltage boosting operation to boost the output voltage of the battery up to a predetermined voltage based on the switching operation (as shown in Fig. 2A, 2B and 2C); and

transmitting means (8 in Fig. 1) operated with the boosted voltage for transmitting data as a radio signal ( inherent as light);

wherein the voltage boosting control signal generating means sequentially generates the voltage boosting control signal to further increase the number of times of the switching operation of the voltage boosting means as time passes thereby to recover a drop of the output voltage of battery caused by the switching operation ( as shown in Fig. 3 and 4; Col 4, L 1 - Col 5, L52).

b) Regarding claim 5, Iida et al. disclose a method of operating a signal transmitter having a battery ( 1 in Fig. 1) and a signal transmitter circuit (8 in Fig. 1) operable with an output voltage of the battery, the method comprising the steps of:

generating a voltage boosting control signal ( block 4 in Fig. 1) having an ON-period and an OFF-period at a first fixed frequency (inherent as low level signal; Col 2, L18-29), the ON-period being increased as time passes;

generating a switching pulse (2 in Fig. 1) at a second fixed frequency higher than the first fixed frequency ( inherent as high level signal; Col 2, L18-29) during ON-period of the voltage boosting control signal so that the switching pulse is generated at least once in each ON-period of the switching pulse; and

boosting the output voltage of the battery in response to the switching pulse so that the transmitter circuit is operated with the boosted output voltage (Col 2, L36-60).

c) Regarding claim 6, Iida et al. disclose the method of operating a signal transmitter as in claim 5, wherein:

the ON-period is held uniform until the voltage boosting control signal is generated a predetermined number of times and being increased each time the voltage boosting control signal is generated another predetermined number of times following the predetermined number of times (Fig. 2A, 2B and 2C; Col 2, L36-60).

***Allowable Subject Matter***

4. Claims 1-3 would be allowable if rewritten to overcome the objections, set forth in this Office action.

5. The following is a statement of reasons for the indication of allowable subject matter:

None of the prior art teaches or suggests a signal transmitter comprise a battery; a voltage boosting control signal generating means, a voltage boosting means including a switching means for generating a switching operation through input of the voltage boosting control signal to conduct a voltage boosting operation to boost the output voltage of the battery to a predetermined voltage based on the switching signal and a transmitting means. A period of the voltage boosting control signal has a signal generation allowing period for allowing generation of the switching signal and a inhibiting period to inhibit generation of the switching signal, the signal generation

allowing period is increased as time passes to increase a number of generation of the switching signal. The switching means generates the switching signal during the signal generation allowing period and stops generation of the switching signal during the signal generation inhibiting period, and wherein the voltage boosting means boosts the output voltage of the battery to the predetermined voltage for every generation of the switching signal.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Yi Zheng whose telephone number is (571) 272-3049. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-879-9306.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Eva Yi Zheng
Examiner
Art Unit 2634

November 30, 2004

SHUWANG LIU
PRIMARY EXAMINER